

With respect to the § 102 rejection of claim 1, the Examiner asserts that Glenn '644 discloses a method of making mountable MEMS devices comprising assembling a portion of a wafer having a main surface and a multiplicity of spaced-apart caps projecting upwardly from the main surface (indicated by reference numeral 42 in Figure 2B), and having channels between the caps 16 (Applicants note that reference numeral 16 in Figure 3 of Glenn '644 is used to refer to the bond pads and not channels, as asserted by the Examiner); a terminal bearing element incorporating an array of terminals 44 (Figure 3); and electrically connecting the terminals by bonding leads 46 extending to contacts on the wafer disposed in the channels. The Examiner makes a similar assertion with respect to claim 13, namely that Glenn '644 discloses a method of making electronic devices comprising assembling a portion of a wafer having a main surface, structure defining an upper surface above the main surface, depressions extending into the wafer from the upper surface and contacts in the depressions; and a terminal bearing element incorporating an array of terminals so as to mount a plurality of terminals simultaneously; and electrically connecting the terminals by bonding leads extending to contacts on the wafer disposed in the depressions.

Applicants respectfully assert that Glenn '644 does not teach the methods asserted by the Examiner because Glenn '644 does not teach electrically connecting terminals by bonding leads extending to contacts on the wafer disposed either in channels, as asserted with respect to claim 1, or in depressions, as asserted with respect to claim 13. As discussed in col.2, 11.12-26 and shown in Fig. 3 of Glenn '644, the attachment of package 40, including cap 42 and micromachine chip 12 to substrate 52 is carried out only after singulation of wafer 10. Once the wafer in such an arrangement is singulated, it is no longer a wafer, but rather a plurality of individual

chips 12. Further, after singulation, there are no longer any channels or depressions present in the structure, as shown in Figure 3 of Glenn '644. As shown in Figs. 6 and 7 of the present application, leads 38 are bonded to contacts 22, which are disposed within channels 16, which are present only prior to singulation of wafer 10. Because any structure of Glenn '644 which may be considered a wafer, a channel or a depression is eliminated by singulation of the wafer, as shown in Figure 3, and because Glenn '644 teaches bonding of leads to contacts only after singulation of wafer 10, Glenn '644 can not teach the method of claim 1, wherein bonding takes place to contacts on a wafer disposed in channels, or of claim 2, wherein bonding takes place to contacts on a wafer disposed in depressions.

Even if Glenn '644 could be said to disclose the methods asserted by the Examiner, the asserted methods do not disclose all of the elements of either claim 1 or claim 13. Specifically, the Examiner does not assert that Glenn '644 teaches assembly of at least a portion of a wafer with a terminal bearing element so as to mount terminals simultaneously on a plurality of caps, as stated in claim 1, or on an upper surface, as stated in claim 13. Glenn '644, in fact, does not teach or suggest either of these steps. The fabrication method shown in Figures 1-3 of Glenn '644 involves a bond pad 16 which is disposed on micromachine chip 12 being connected to trace 44 disposed on substrate 52 using bond wire 50. Figure 3 of Glenn '644 also teaches grounding cap 42 by attaching bond wire 50 to ground trace 40. Neither of these arrangements shows a terminal mounted on a cap, as stated in claim 1, or a terminal mounted on an upper surface defined by a structure, as stated in claim 13.

Similarly, the Examiner fails to show a teaching within Glenn '644 that terminals mounted on the caps or the upper surface are electrically connected to the wafer as stated

in claims 1 and 13, respectively. Neither the specification nor the drawing figures of Glenn '644 show an electrical connection between any feature of the cap 42 and any feature of a wafer.

Still further, the Examiner fails to show a disclosure within Glenn '644 of terminals being mounted *simultaneously* on caps or on the upper surface of a structure. As discussed in paragraph [0036] of the present application "[b]y assembling the tape to the wafer, terminals and leads are assembled to a large number of caps 14 simultaneously. In the particular embodiment shown [in FIGS. 5 and 6], the terminals [36] are assembled to all of the caps [14] on the entire wafer [10] in a single operation." In this example, the tape 30 is an example of a terminal bearing element which is assembled to at least a portion of the wafer 10 such that the terminals 36 carried in the tape 30 are assembled to the tops of a plurality of caps 14 affixed to the wafer simultaneously, or in a single step. No such teaching is present within Glenn '644, as Glenn '644 only teaches the forming of electrical connections after singulation, which would preclude simultaneously mounting terminals as stated in claims 1 and 13.

Based on the foregoing, Glenn '644 does not anticipate either claim 1 or claim 13 of the present application. Accordingly, Applicants respectfully request reconsideration and withdrawal of the § 102 rejection of claims 1 and 13 over Glenn '644. Applicants also respectfully assert that claims 2-7 and 12 are allowable, at least because they depend from claim 1, and that claims 14-17 and 21 are allowable, at least because they depend from claim 13. Applicants, therefore, respectfully request that the § 102 rejection of claims 2-7, 12, 14-17 and 21 be withdrawn.

With respect to the rejection of claims 8-10 and 18-20 under 35 U.S.C. § 103(a) as being obvious over Glenn '644 in view of Haba '910, the Examiner asserts that Glenn '644 teaches

all of the elements of the claims, as set forth in paragraph 2 of the Official Action, but that Glenn '644 does not teach using a lead frame that includes a dielectric layer and terminals electrically connected to each other prior to assembly as the terminal bearing element. The Examiner further asserts that Haba '910, can be combined with Glenn '644 to overcome the deficiencies of Glenn '644 with respect to the individual claim elements, and that such a combination would have been obvious to one of ordinary skill in the art. Applicants respectfully assert that claims 8-10 are allowable because they depend from claim 1 which, as set forth above, is believed to be allowable and because the addition of Haba '910 does not overcome the deficiencies of Glenn '644 with respect to claim 1, as discussed in response to the previous Official Action. Similarly, claims 18-20 are respectfully asserted as allowable because they depend from claim 13 which, as also set forth above, is believed to be allowable and because the addition of Haba '910 does not overcome the deficiencies of Glenn '644 with respect to claim 13.

Claim 11 is rejected under § 103 as being obvious over Glenn '644 in view of Kim '206. In making this rejection, the Examiner asserts that Glenn '644 teaches all of the limitations of claim 11, but does not teach the MEMS device being acoustically active. The Examiner further asserts that Kim '206 teaches a method for making a mountable, acoustically active device and that the claimed invention would have been obvious in light of the combination of Glenn '644 and Kim '206. Applicants respectfully assert that claim 11 is allowable because it depends from claim 1, which, as stated above, is believed to be allowable and because the addition of Kim '206 to the teachings of Glenn '644 does not overcome the deficiencies of Glenn '644 with respect to claim 1. Accordingly, Applicants respectfully

request reconsideration and withdrawal of the § 103 rejection of claim 11.

As it is believed that all of the rejections set forth in the Official Action have been fully met, favorable reconsideration and allowance are earnestly solicited.

If, however, for any reason the Examiner does not believe that such action can be taken at this time, it is respectfully requested that he telephone Applicants' attorney at (908) 654-5000 in order to overcome any additional objections which he might have.

If there are any additional charges in connection with this requested amendment, the Examiner is authorized to charge Deposit Account No. 12-1095 therefor.

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Respectfully submitted,

By 

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